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January 23, 2002

General Brent Scowcroft
Chairman, President's Foreign Intelligence Advisory Board (PFIAB)
Forum for International Policy
Suite 500
900 17th Street, NW
Washington, DC 20076

Dear General Scowcroft:

I am writing to urge you to publish an unclassified version of the "End-to-End" review of security at DOE and DOD nuclear facilities you are currently conducting for the Nuclear Command and Control System at the National Security Council. In light of DOE's longstanding refusal to implement security upgrades recommended by numerous panels of experts such as yourself, a full and open debate on these vital matters is necessary to ensure that the appropriate measures are undertaken and remain in place.

I have long been concerned about security at DOE nuclear facilities. In October, 1997 I sent a letter to then-DOE Secretary Federico Pena regarding security and safeguards at various DOE facilities that detailed the risk of terrorist attacks and lax security at many DOE facilities, including Rocky Flats near Denver Colorado, Los Alamos National Laboratory, Lawrence Livermore National Laboratory and the Y-12 site at Oak Ridge National Laboratory in Tennessee. My letter cited reports of improper storage of nuclear weapons materials in broken vaults, the possibility that terrorists who gained access to nuclear weapons materials could quickly construct a dirty bomb or crude nuclear bomb that could achieve criticality and produce nuclear yield, reports that anti-government militia groups attempted to recruit members from within the Rocky Flats security guard force, and that DOE reports on Safeguards and Security repeatedly downplayed and ignored security risks. In his April 21, 1998 response to my letter, then-DOE Secretary Pena stated that "maintaining adequate safeguards over nuclear material is a serious and important responsibility that must receive attention at the highest levels of the Department."

Unfortunately, it seems as though little has been done to remedy the security problems identified in my 1997 letter. On June 15, 1999, the President's Foreign Intelligence Advisory Board (PFIAB) issued a report entitled Science at its Best, Security at its Worst: A Report on Security Problems at the U.S. Department of Energy which concluded that security at DOE was "responsible for the worst security record on

secrecy that the members of this panel have ever encountered," that the "Department has devoted far too little time, attention, and resources to the prosaic but grave responsibilities of security and counterintelligence in managing its weapons and other national security programs," and that DOE had essentially ignored 25 years worth of reports recommending improvements in security.

DOE seems to have ignored the 1999 PFIAB report as well. A September 2001 report entitled U.S. Nuclear Weapons Complex: Security at Risk by the Project on Government Oversight (POGO) described its eight-month investigation that used unclassified documents and credible whistleblower sources to establish that nuclear weapons material at DOE sites remains vulnerable to theft or onsite construction and detonation of dirty bombs or homemade nuclear weapons. In particular, the POGO report described repeated failures by DOE contractor security personnel to protect DOE facilities from attack by mock "terrorists" who were testing security, repeated failures by DOE and its contractors to address and correct identified security problems, and weak and ineffective oversight of security by DOE headquarters personnel.

As you know, ten DOE sites, some of which are located near urban areas such as Denver Colorado and the Bay Area of California, reportedly contain enough weapons-grade plutonium (reportedly about 7 kg of metallic plutonium and about 10 kg of plutonium oxide would be needed) and highly enriched uranium (reportedly about 25 kg of metallic uranium and about 35 kg of highly enriched uranium oxide would be needed) to build a crude atomic bomb. In addition, the DOE Transportation Security Division regularly transports nuclear weapons materials on public highways from site to site within the DOE complex.

While protecting these facilities from theft of nuclear material is an important objective, I am concerned that a group of suicidal terrorists might not bother to attempt to steal nuclear weapons materials from these sites; instead, they might attempt to gain access to the nuclear materials located within them by killing the security guard forces, and, once inside the facility, proceed to construct and detonate dirty bombs or homemade nuclear bombs. Recent press reports have detailed both Al Qaeda members' attempts to obtain nuclear materials as well as their desire to attack U.S. nuclear facilities.

A radiological dispersion device or "dirty bomb" could be created by surrounding nuclear weapons material with conventional explosives and then detonating the conventional explosives, or by detonating a large truck bomb adjacent to a facility used to store nuclear material. The amount of damage done would depend on the amount of radioactive materials (and how small the particles of those materials were ground) as well as on the amount of conventional explosives used to detonate the device. Such a device could be constructed quickly once terrorists gained access to the nuclear materials, and could result in deaths, cancer and widespread contamination of the surrounding community.

Even more alarming is the possibility that terrorists could rapidly construct and detonate an improvised nuclear device¹, or "homemade nuclear bomb," which could achieve criticality and release nuclear yield. Criticality occurs when the minimum amount of fissile nuclear material necessary to cause a chain reaction is brought together, either deliberately or accidentally. The first-ever fatal criticality accident took place at Los Alamos National Laboratory during the Second World War, when a Manhattan Project scientist accidentally dropped a metal block near a plutonium sphere and caused a chain reaction to begin, which delivered a fatal dose of radiation before he was able to move the metal block. A recent example of a criticality accident took place in 1999 in Tokaimura, Japan, and delivered fatal doses of radiation to two people and high doses of radiation to others before the chain reaction, which was caused by having too much highly-enriched uranium in a tank, was halted.

If, instead of trying to stop a chain reaction, a group of suicidal terrorists tried to start one by rapidly propelling two masses of weapons-grade plutonium or uranium towards one another to create a critical mass (conventional explosives or propellants can be used to propel the masses towards one another), I have been informed that the result could be equivalent to that of a detonation of a nuclear weapon.

The public should be aware of what the federal government is doing to secure DOE nuclear facilities, and it is vital that continued Congressional oversight of DOE and its contractors ensure that DOE finally implements the security upgrades that have been called for so many times and by so many independent panels of experts. Consequently, I ask that you publish an unclassified version of your report on security at DOE and DOD nuclear sites at the same time as the classified version. Thank you very much for your attention to this important matter. If you have any questions or concerns, please have your staff contact Dr. Michal Freedhoff or Mr. Jeff Duncan of my staff at 202-225-2836.

Sincerely


Edward J. Markey

¹ According to Department of Defense documentation, an improvised nuclear device is defined as "a device incorporating radioactive materials designed to result in the dispersal of radioactive material or in the formation of a nuclear-yield reaction. Such devices may be fabricated in a completely improvised manner or may be an improvised modification to a U.S. or foreign nuclear weapon."